FIG. 1

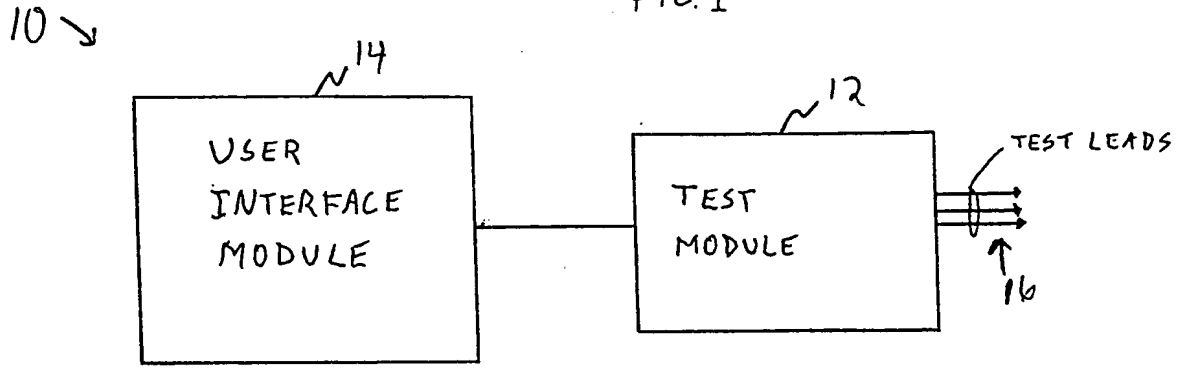


FIG. 2 USER I/F MODULE

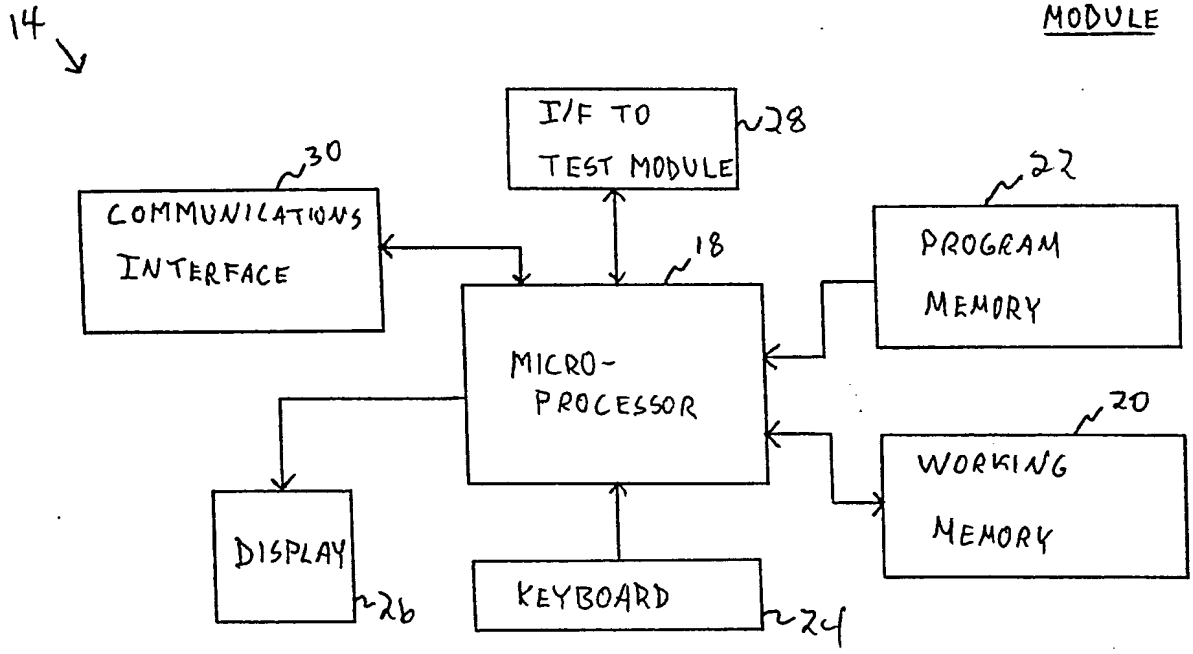
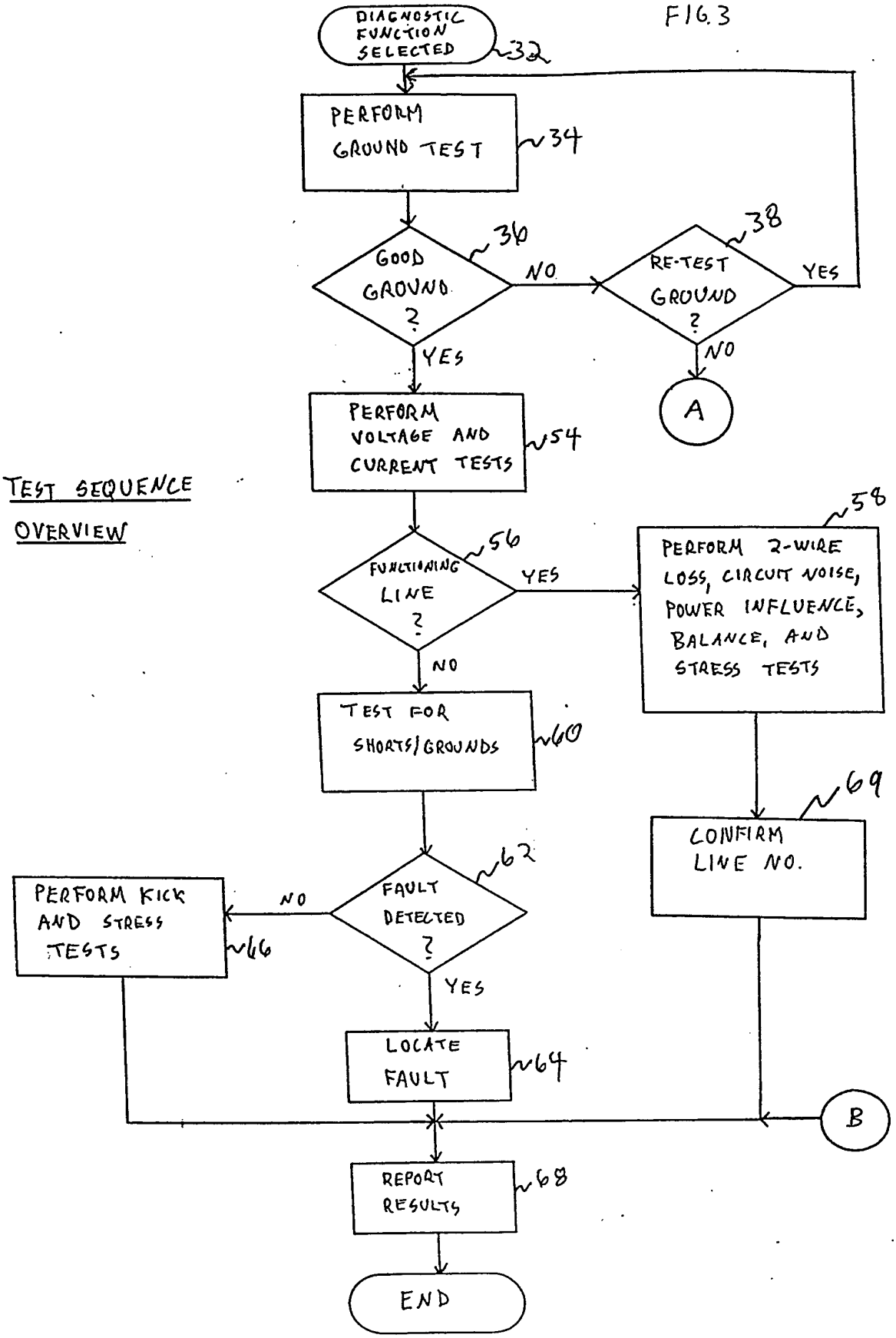


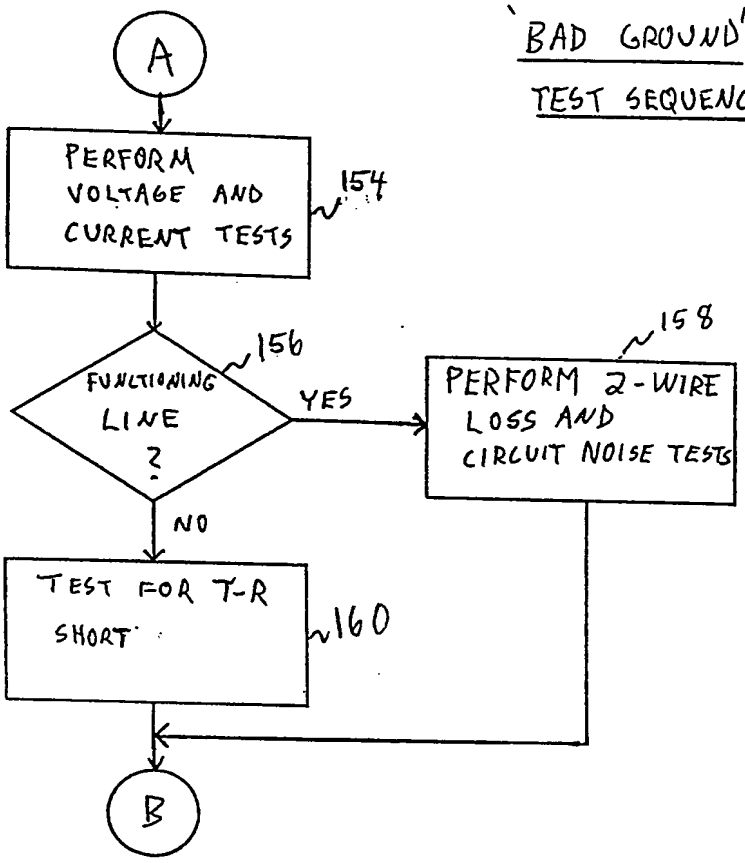
FIG. 3



TEST SEQUENCE OVERVIEW

Fig. 3A

'BAD GROUND'
TEST SEQUENCE



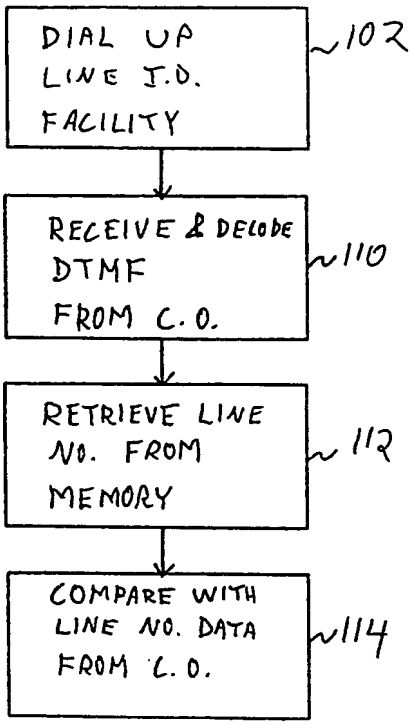


FIG. 3B

LINE I.D. -- TEST SET SIDE

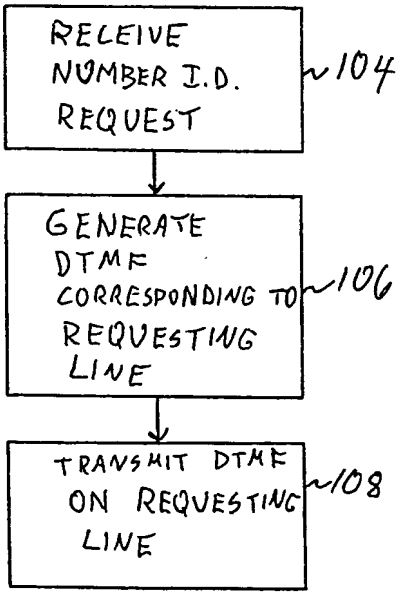


FIG. 3C

LINE I.D. -- C.O. SIDE

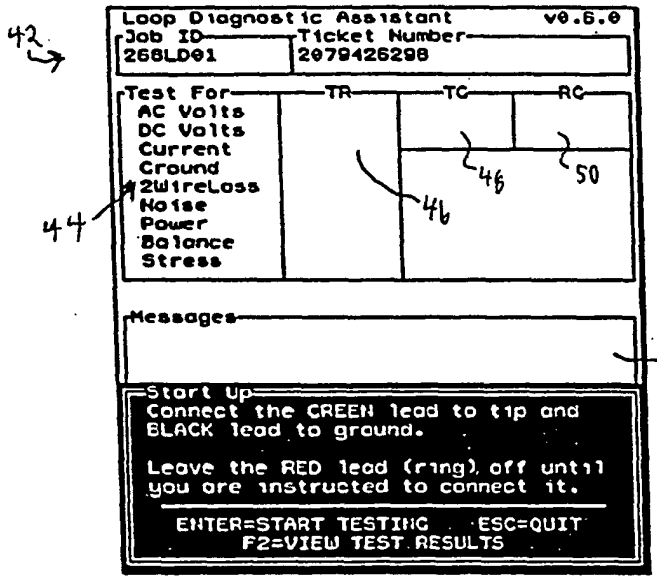

Loop Diagnostic Assistant v0.6.0
Job ID
268LD01
Ticket Number
2079426298
Test For
TR
TC
RC
AC Volts
DC Volts
Current
Ground
2WireLoss
Noise
Power
Balance
Stress
Messages
Start Up
Connect the GREEN lead to tip and BLACK lead to ground.
Leave the RED lead (ring) off until you are instructed to connect it.
ENTER=START TESTING ESC=QUIT
F2=VIEW TEST RESULTS
42
44
46
48
50
52

FIG. 4

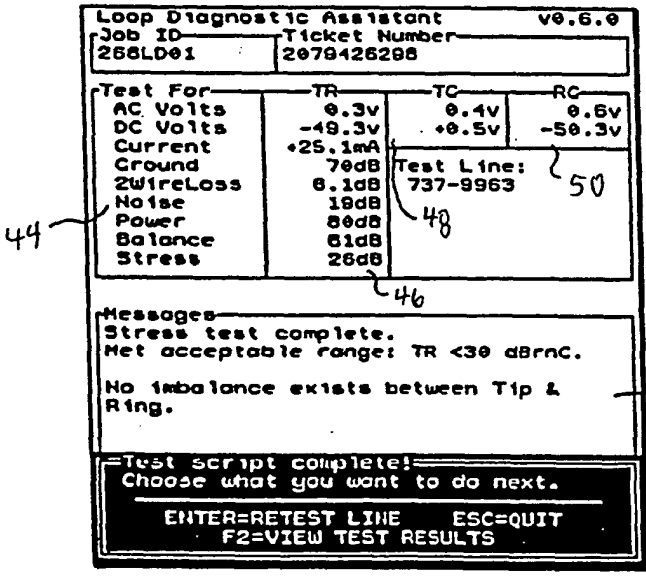

Loop Diagnostic Assistant v0.6.0
Job ID
268LD01
Ticket Number
2079426298
Test For
TR
TC
RC
AC Volts 0.3v 0.4v 0.6v
DC Volts -49.3v +0.5v -50.3v
Current +25.1mA
Ground 70dB
2WireLoss 6.1dB
Noise 19dB
Power 80dB
Balance 61dB
Stress 26dB
Test Line:
737-9963
Messages
Stress test complete.
Met acceptable range: TR <30 dBrnC.
No imbalance exists between Tip & Ring.
Test script complete!
Choose what you want to do next.
ENTER=RETEST LINE ESC=QUIT
F2=VIEW TEST RESULTS
44
46
48
50
52

FIG. 5

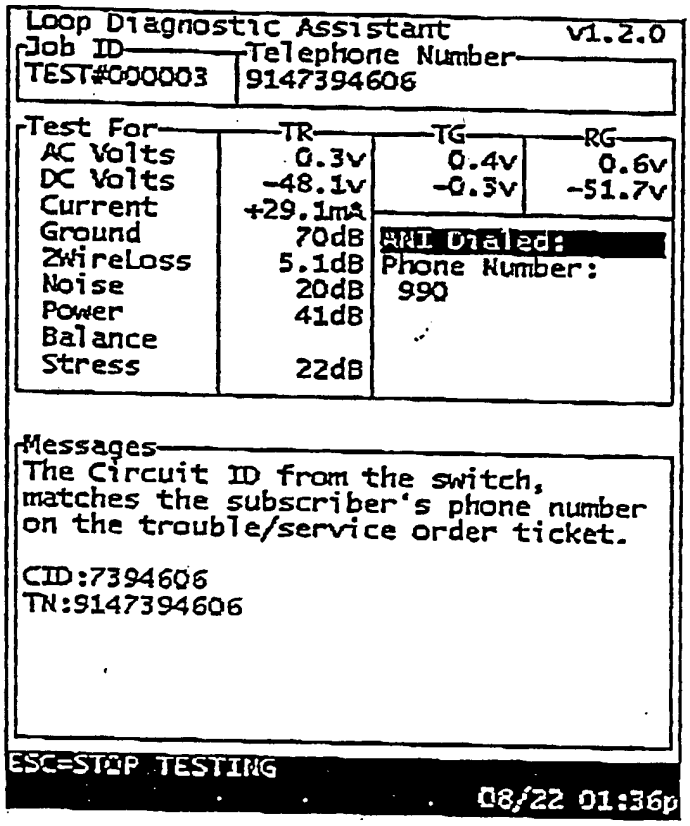

Loop Diagnostic Assistant v1.2.0
Job ID
TEST#000003
Telephone Number
9147394606
Test For
TR
TG
RG
AC Volts 0.3v 0.4v 0.6v
DC Volts -48.1v -0.3v -51.7v
Current +29.1mA
Ground 70dB
2WireLoss 5.1dB
Noise 20dB
Power 41dB
Balance
Stress 22dB
ANI Dialed:
Phone Number:
990
Messages
The Circuit ID from the switch, matches the subscriber's phone number on the trouble/service order ticket.
CID:7394606
TN:9147394606
ESC=STOP TESTING
08/22 01:36p

FIG. 5A

```
Trouble found:
Found unacceptable stress reading.
Accepted range is <30 dBmc
one-sided fault (unbalance) exists.

Test script complete
Choose what your want to do next
ENTER=RETEST LINE  ESC=QUIT
F2=VIEW RESULTS
```

FIG. 6

```
Loop Diagnostic Assistant                    v0.6.0
Job ID          Ticket Number
268LD01         2079426298

Test For        TR          TC          RC
 AC Volts       0.3v        0.4v        0.6v
*DC Volts       +0.3v       -0.5v       -0.3v
*Ohms           0.1kΩ       3500.0kΩ    3500.0kΩ
 Kick(Feet)     ........
 Stress

Fault/Distance
Temp: 68        Coils:      Mixed(Y/N):
 AWG:           AWG Ft:
OHMS: 100.00    EstFt:      Sect: 1

Messages
Please enter the Temperature now!
Underground cable typically is 50°F.
Aerial cable is at outside
temperature unless extremely hot
(above 90°F), then add 10°F to
outside temperature reading.

ESC=END CALCULATOR
Ohms Fault Calculator          02/03 11:14a
```

44 46 48 50 52 70

FIG. 7

```
Temp:  68        Coils: N  Mixed(Y/N): N
AWG:   26        AWG Ft:
OHMS:  100.00    EstFt: 1176    Sect:
```

FIG. 7A

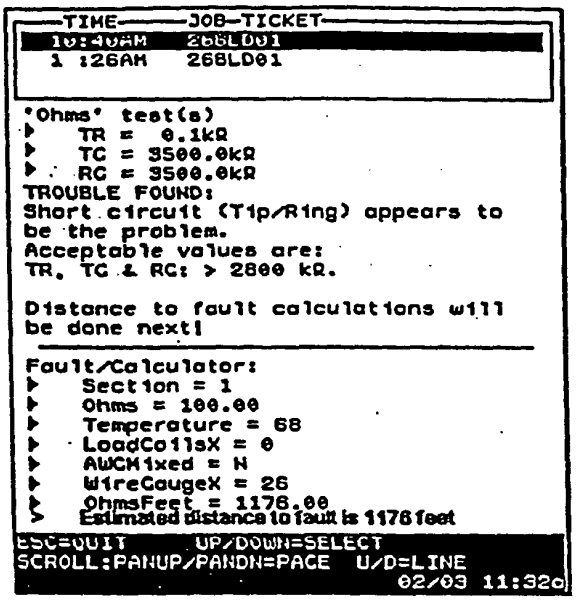

TIME JOB-TICKET
10:40AM 268LD01
1 :26AM 268LD01
'Ohms' test(s)
TR = 0.1kΩ
TC = 3500.0kΩ
RC = 3500.0kΩ
TROUBLE FOUND:
Short circuit (Tip/Ring) appears to be the problem.
Acceptable values are:
TR, TC & RC: > 2800 kΩ.
Distance to fault calculations will be done next!
Fault/Calculator:
Section = 1
Ohms = 100.00
Temperature = 68
LoadCoilsX = 0
AWGMixed = N
WireGaugeX = 26
OhmsFeet = 1176.00
Estimated distance to fault is 1176 feet
ESC=QUIT UP/DOWN=SELECT
SCROLL:PANUP/PANDN=PAGE U/D=LINE
02/03 11:32a

FIG.8

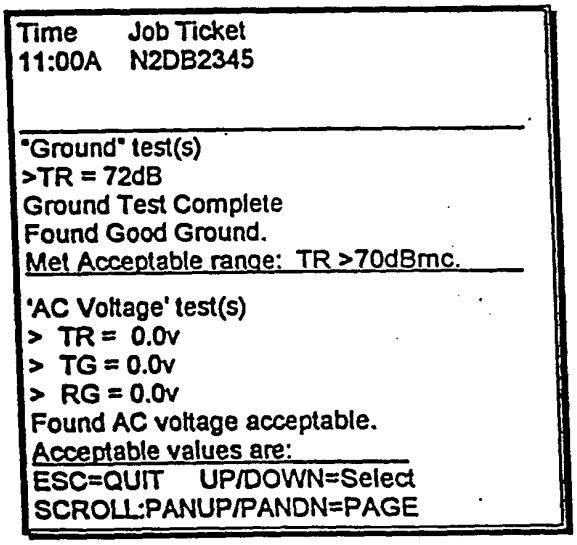

Time Job Ticket
11:00A N2DB2345
'Ground' test(s)
>TR = 72dB
Ground Test Complete
Found Good Ground.
Met Acceptable range: TR >70dBmc.
'AC Voltage' test(s)
> TR = 0.0v
> TG = 0.0v
> RG = 0.0v
Found AC voltage acceptable.
Acceptable values are:
ESC=QUIT UP/DOWN=Select
SCROLL:PANUP/PANDN=PAGE

FIG.9

```
Time      Job Ticket
11:00A    N2DB2345
10:40A    N2DB2345
_____________________________
TR, TG = RG less than 5vAC


'DC Voltage' test
TR  = -.6
TG  = 0.0
RG  = 0.0
Found Little or no DC voltage

ESC=QUIT     UP/DOWN=Select
SCROLL:PANUP/PANDN=PAGE
```

FIG. 10

```
----TIME-------JOB-TICKET-----
  10:40AM    268LD01
  10:26AM    268LD01

'Current Loop' test[s]
>TR=+28.22 ma
Loop current test completed
Met acceptable range TR=23-65
_____________________________

'2w loss' test[s]
>"Test Line" 1-800-555-1212
>TR = -65.8dB
Unable to get valid circuit loss reading
Acceptable range is TR< 8.5 dB
Make sure the test line # is one
which generates a 1004 Hz tone.

ESC=QUIT      UP/DOWN=SELECT
SCROLL:PANUP/PANDN=PAGE   U/D=LINE
                          02/03 11:32a
```

FIG. 11